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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,224	04/25/2001	Dietmar Adler	4797A-21	7428

7590 06/30/2004

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EXAMINER
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RIDLEY, BASIA ANNA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/842,224	<b>Applicant(s)</b> ADLER ET AL.	
	<b>Examiner</b> Basia Ridley <i>BR</i>	<b>Art Unit</b> 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 17 and 18 is/are pending in the application.  
     4a) Of the above claim(s) 4-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-12, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

*Drawings*

1. The drawings were received on 26 March 2004. These drawings are acceptable.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim(s) 1-3, 7-10 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudymov et al. (DE 35 23 610) in view of Price (USP 2,231,295).

Regarding claim(s) 1-2, 7 and 17, Gudymov et al. discloses a gasification reactor vessel comprising:

- a pressure shell (1, 3, 5) having an encircling body wall and shell ends at each of opposite ends of said body wall (Fig. 1);
  - at least one cooling duct (2, 4, 9) extending around an outer surface of said body wall (1, 3, 5), said duct being fixedly connected to said outer surface, interior surfaces of said duct communicating with said outer surface;
  - a fluid supply conduit (11) communicating with said cooling duct;
  - a fluid discharge conduit (12) communicating with said cooling duct; and
  - a lining of refractory (19) encircling an inner surface of said encircling body wall (1, 3, 5);
- wherein
- said at least one duct (2, 4, 9) extends circularly around said body wall (1, 3, 5) outer surface and said fluid supply (11) and fluid discharge (12) conduits are annular and disposed, respectively, at one of two opposite ends of said shell body (Fig. 1);

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- said at least one duct extends in a direction having at least a longitudinal component along said body wall, and said fluid supply (11) and fluid discharge (12) conduits are annular and located, respectively, at one of two opposite ends of said shell body (Fig. 1).

While Gudymov et al. discloses at least one cooling duct, the reference does not explicitly disclose a plurality of ducts wherein each cooling duct comprises a pair of spaced webs fixedly connected at common edges of each to said body wall outer surface, and a arcuate segment joining opposite edges of said webs.

Price establishes equivalency of cooling ducts having various shapes e.g. at least one cooling duct, such as a cooling jackets and cooling ducts formed as half tubes comprising a pair of spaced webs fixedly connected at common edges of each to said body wall outer surface, and a arcuate segment joining opposite edges of said webs, said ducts extending circularly around said body wall outer surface (Fig. 3-5). As instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the at least one cooling duct of Gudymov et al. with half pipe cooling ducts, since such modification would have involved a mere substitution of known equivalent structures. A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art.

Regarding claim(s) 3, 8-10 and 18 Gudymov et al. in view of Price discloses all of the claim limitations as set forth above. Additionally, Price teaches the cooling ducts wherein:

- the webs of each duct are fixedly connected to said body wall outer surface with welded connections (Fig. 3-4);
- said ducts are arranged obliquely of a central axis of said body wall (Fig. 1 and 3-4);

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- said ducts extend in a spiral course around said body wall outer surface (Fig. 1 and 3-4);
- each duct encircles said body outer wall surface spaced from ducts adjacent thereto (Fig. 1 and 3-4);
- a circumferential space separates adjacent ones of said ducts on said body wall outer surface (Fig. 1 and 3-4).

4. Claim(s) 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gudymov et al. (DE 35 23 610) in view of Price (USP 2,231,295), as applied to claim 1 above, and further in view of Dach (USP 4,637,823).

Regarding claims 11 Gudymov et al. in view of Price disclose all of the claim limitations as set forth above, but the references do not disclose the refractory layer comprising at least two separate concentric layers of refractory material.

Dach teaches a gasifier reactor vessel wherein the refractory layer comprises at least two separate concentric layers of refractory material (Fig. 1). One of them forms a supporting brick wall while the other one shields the supporting wall from the highest temperature while it is free to expand without being subject to any compressive load from the dome (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a refractory layer comprising at least two separate concentric layers of refractory material in the reactor vessel of Gudymov et al., as taught by Dach, for the purpose of improving operation of said vessel by providing a separate supporting layer and insulating layer.

5. Claim(s) 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gudymov et al. (DE 35 23 610) in view of Price (USP 2,231,295) and further in view of Dach (USP 4,637,823), as applied to claim 11 above, and further in view of Schulz (USP 4,340,397).

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Regarding claims ~~11~~<sup>12</sup> Gudymov et al. in view of Price and further in view of Dach disclose all of the claim limitations as set forth above. Additionally Dach discloses the vessel wherein the refractory layer comprises at least two separate concentric layers of refractory material such as fire bricks (Fig. 1 and C1/L59-C2/L35), but the reference does not explicitly disclose said refractory material being at least one of a ceramic and polytetrafluoroethylene.

Schulz establishes equivalency of fire ducts and ceramic blocks (C6/L64-C7/L12). As instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the firebrick layers of Gudymov et al. in view of Price and further in view of Dach with ceramic blocks, since such modification would have involved a mere substitution of known equivalent structures. A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

#### ***Response to Arguments***

7. Applicant's arguments filed on 26 March 2004 have been fully considered but they are not persuasive.

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8. The applicant argues that Price patent is non-analogous art, being in the field of internal combustion engines rather than gasifiers. This is not found persuasive, because the field of relevant art need not be drawn so narrowly. As stated in *In re Deminski*, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986) (quoting *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA)): the determination that a reference is from a non-analogous art is therefore two-fold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. Following that test, one concerned with the field of gasifier reactors in which heat is generated by combustion of fuel (see Gudymov et al., page 11) and which are cooled by at least one external cooling duct (see Gudymov et al., Fig. 1) is clearly chargeable with knowledge of Price, which discloses "a heat transfer apparatus for (...) high pressure combustion chambers (...) adaptable for extraction and utilization of heat form combustion chambers (...)" (see Price, C1/L1-6). One of ordinary skill in the art at the time the invention was made would recognize that an external cooling duct can be used for various combustion chambers without changing the principles of its operation, regardless of an application for which the combustion chamber is being used. Therefore, when looking for modification of said external cooling duct, one of ordinary skill in the art would utilize teachings regarding said external cooling duct which can be found in various applications, and not just in one specific application, such as fuel. Therefore, Price is "within the field of the inventor's endeavor". Further, Price is "reasonably pertinent" to the particular problem with which applicant is involved, namely cooling of a combustor vessel (see instant specification: pages 2-4). Since Price discloses a solution to the problem of cooling combustion chambers and

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establishes equivalency of various external cooling ducts used to cool said combustion chambers, therefore it is reasonably pertinent to the problem with which appellant is involved, and thus it is an analogous art.

9. Applicant argues that Gudymov et al. discloses that the cooling gap is inside of the pressure shell. This is not found persuasive, because Fig. 1 of Gudymov et al. shows a pressure shell (1, 3, 5) and at least one cooling duct (2, 4, 9) extending around an outer surface of said pressure shell (1, 3, 5).

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

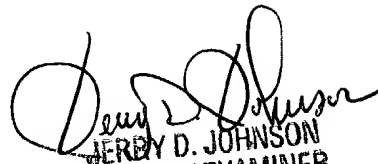


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The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

BR  
Basia Ridley  
Examiner  
Art Unit 1764

  
JERRY D. JOHNSON  
PRIMARY EXAMINER  
GROUP 1100

BR  
June 24, 2004